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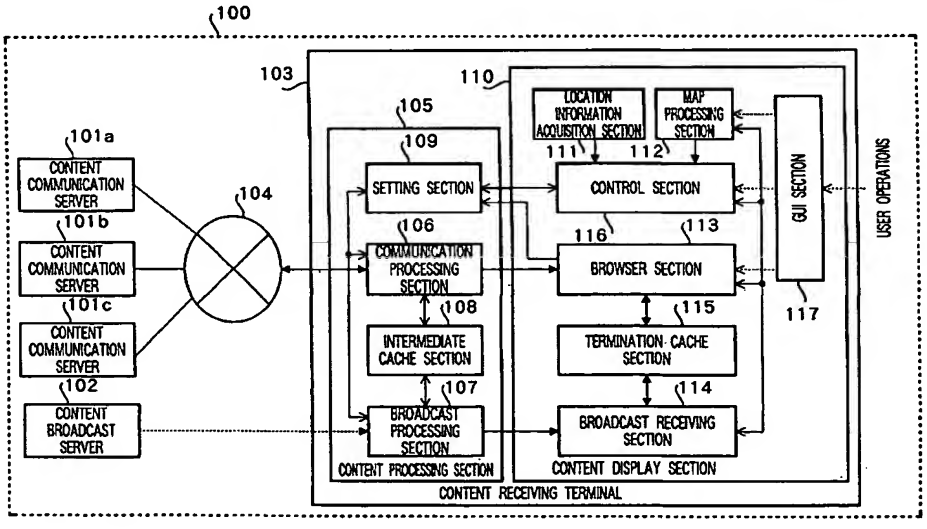
(54) Title: CONTENT PROCESSING APPARATUS AND CONTENT DISPLAY APPARATUS BASED ON LOCATION INFORMATION



(57) Abstract: The present invention receives list content providing location conditions in a list organized by location conditions in which a reference destination of location-dependent content, being content assigned correspondence to geographical location information, is compiled for each location condition, sent from a content communication server; receives the sent location information; generates area-specific list content comprising information on location-dependent content corresponding to location information, by extracting a list organized by location conditions, in which location conditions matching location information are provided, from the list content; and outputs the area-specific list content.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

AMENDED CLAIMS

[Received by the International Bureau on 21 December 2004 (21.12.04): original claims 1-8, 11, 13-18, 20, 22, 42, 43, 46 and 47 are amended ; original claims 9, 10, 12, 21, 23-41, 44, 45, 48, 49, 52 and 53 are cancelled ; other claims are retained unchanged.]

1. (Revised) A content processing apparatus comprising:

a list content receiving section that, upon request from a terminal, receives list content from a content communication server, said list content providing location conditions in a list organized by location conditions in which a reference destination of location-dependent content, being content assigned correspondence to geographical location information, is compiled for each location condition;

a location information receiving section that receives location information sent from said terminal;

a content adaptation processing section that generates area-specific list content comprising information on said location-dependent content corresponding to said location information by extracting said list organized by location conditions in which are provided said location conditions matching said location information from said list content;

an area-specific list content distribution processing section that distributes said area-specific list content to said terminal; and

a content relay distribution section that, upon request from said terminal, receives said location-dependent content from said content communication server , and relay-distributes said location-dependent content to said terminal.

2. (Revised) The content processing apparatus according to claim 1, wherein said content adaptation processing section:

creates a location condition list in which said location condition contained in said list content is extracted;

performs location determination processing that compares said location condition recorded in said location condition list with said location information;

records a result of said location determination in said location condition list;

when new location information is acquired, obtains a new location determination result by performing said location determination processing; and

by determining whether or not a previous said location determination result and said new location determination result match, determines whether or not said location determination result has been updated.

3. (Revised) The content processing apparatus according to claim 2, wherein:

in said location condition list there is recorded a reference destination of said list content that is a generation source of said location condition; and

said content adaptation processing section outputs location determination update information indicating presence or absence of a change in said location determination result, and when said location determination update information indicates that there

is a change in said location determination result, also outputs a reference destination of said list content.

4. (Revised) The content processing apparatus according to claim 3, wherein:

said location information comprises a latitude coordinate value and a longitude coordinate value of an arbitrary point within an area stipulated beforehand; and

said location condition comprises a circular area stipulated by center latitude and longitude coordinate values and length of radius.

5. (Revised) The content processing apparatus according to claim 3, further comprising:

a menu content relay distribution section that, upon request from said terminal, receives menu content from said content communication server, said menu content being composed of pairs of a category of said location-dependent content and a reference destination of list content corresponding to said category, and relay-distributes said menu content to said terminal; and

a list content distribution request receiving section that receives a distribution request for said list content corresponding to a category selected by a user of said terminal, sent from said terminal,

wherein said list content receiving section receives said list content in accordance with said distribution request for said list content.

6. (Revised) The content processing apparatus according to claim 3, further comprising:

a menu content receiving section that, upon request from said terminal, receives menu content from a content broadcast server that performs data broadcasting, said menu content being composed of pairs of a category of said location-dependent content and a reference destination of list content corresponding to said category, and relay-distributes said menu content to said terminal;

a list content distribution request receiving section that receives a distribution request for said list content corresponding to a category selected by a user of said terminal, sent from said terminal,

wherein said list content receiving section receives said list content in accordance with said distribution request for said list content.

7. (Revised) The content processing apparatus according to claim 3, further comprising:

a general content receiving section that receives general content other than said location-dependent content; and

a general content processing section that outputs said general content.

8. (Revised) The content processing apparatus according to claim 3, wherein:

said list content receiving section stores said list content, and, when a distribution request for list content

that is identical to said list content stored in said list content receiving section is received, does not receive said list content anew from said content server again; and

after said list content receiving section stores said list content, said content adaptation processing section, when new location information is acquired by said location information receiving section, generates said area-specific list content comprising information on said location-dependent content corresponding to newly acquired said location information by extracting said list organized by location conditions in which are provided said location conditions matching said newly acquired location information from said list content.

9 (Cancelled)

10. (Cancelled)

11. (Revised) A content processing apparatus comprising:

a content storage section that stores list content providing location conditions in a list organized by location conditions in which location-dependent content which is content assigned correspondence to geographical location information, and a reference destination of said location-dependent content, are compiled for each said location condition;

a location information receiving section that receives location information sent from a terminal;

a content adaptation processing section that

generates area-specific list content comprising information on said location-dependent content corresponding to said location information by extracting said list organized by location conditions in which are provided said location conditions matching said location information from said list content;

an area-specific list content output processing section that distributes said area-specific list content to said terminal; and

a content distribution section that, upon request from said terminal, distributes said location-dependent content corresponding to said location-dependent content distribution request from said terminal.

12. (Cancelled)

13. (Revised) A content display apparatus comprising:

a location information acquisition section that acquires location information at regular intervals;

a location information transmitting section that transmits said location information to the content processing apparatus according to claim 9 at regular intervals;

a distribution request section that transmits a distribution request for area-specific list content generated from said list content, to said content processing apparatus;

an area-specific list content receiving section that receives said area-specific list content from said

content processing apparatus;

an update information receiving section that receives said location determination update information sent from said content processing apparatus in response to said location information;

a list update notification section that notifies a user that said area-specific list content has been updated when said location determination update information indicates that there is a change in a location determination result;

a redistribution request section that, upon request from said user, transmits a redistribution request for said area-specific list content to said content processing apparatus;

a content receiving section that receives said location-dependent content selected by said user from said area-specific list content, from said content processing apparatus; and

a content display section that displays said area-specific list content and said location-dependent content.

14. (Revised) The content display apparatus according to claim 13, wherein said redistribution request section extracts a reference destination of said list content accompanying said location determination update information, and transmits said content distribution request containing said reference destination of said

list content to said content processing apparatus.

15. (Revised) The content display apparatus according to claim 13, wherein, when said location determination update information indicates that there is a change in a location determination result, said content display section displays the latest information and update date and time of said area-specific list content.

16. (Revised) The content display apparatus according to claim 13, wherein:

said location information acquisition section acquires a latitude coordinate value and longitude coordinate value of a present position by means of GPS; and

said location information comprises a circular area with said present position in a center.

17. (Revised) The content display apparatus according to claim 14, wherein:

said content display section has a content display mode that displays said area-specific list content and a map display mode enabling display of map data centered on a present position, and switching is possible between said content display mode and said map display mode; and

said list update notification section displays an update situation of said area-specific list content at all times, and accepts said area-specific list content update request from a user at all times, irrespective of a status of said content display section.

18. (Revised) The content display apparatus according

to claim 17, wherein said content display section, when in said map display mode, has a function that obtains a latitude coordinate value and longitude coordinate value of a point on a map specified by a user, and outputs these to said location information acquisition section.

19. The content display apparatus according to claim 18, wherein said location information acquisition section has a function that accepts input of address information from a user and obtains a latitude coordinate value and longitude coordinate value from input address information, or a function that acquires a latitude coordinate value and longitude coordinate value from said content display section in a state in which a map is displayed.

20. (Revised) A content receiving terminal comprising the content processing apparatus according to claim 9 and a content display apparatus, said content display apparatus having:

a location information acquisition section that acquires location information at regular intervals;

a location information transmitting section that transmits said location information to said content processing apparatus at regular intervals;

a distribution request section that transmits a distribution request for area-specific list content generated from said list content, to said content processing apparatus;

an area-specific list content receiving section

that receives said area-specific list content from said content processing apparatus;

an update information receiving section that receives said location determination update information sent from said content processing apparatus in response to said location information;

a list update notification section that notifies a user that said area-specific list content has been updated when said location determination update information indicates that there is a change in a location determination result;

a redistribution request section that, upon request from said user, transmits a redistribution request for said area-specific list content to said content processing apparatus;

a content receiving section that receives said location-dependent content selected by said user from said area-specific list content, from said content processing apparatus; and

a content display section that displays said area-specific list content and said location-dependent content.

21. (Cancelled)

22. (Revised) A content adaptive distribution system comprising:

a content communication server that distributes list content providing location conditions in a list

organized by location conditions in which location-dependent content, being content assigned correspondence to geographical location information, and a reference destination of said location-dependent content, are compiled for each location condition; and the content receiving terminal according to claim 20.

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

35. (Cancelled)

36. (Cancelled)

37. (Cancelled)

38. (Cancelled)

39. (Cancelled)

40. (Cancelled)

41. (Cancelled)

42. (Revised) A content relay distribution method comprising:

upon request from a terminal, receiving list content from a content communication server, said list content providing location conditions in a list organized by location conditions in which location-dependent content, being content assigned correspondence to geographical location information, and a reference destination of said location-dependent content, , are compiled for each location condition;

receiving location information from said terminal;

upon receiving a distribution request for said list content from said terminal, generating area-specific list content comprising information on said location-dependent content corresponding to said location information by extracting said list organized by location conditions in which are provided said location conditions matching said location information from said list content, and distributing said area-specific list content to said terminal;

upon receiving said location information anew from said terminal, distributing previously generated area-specific content and update information indicating presence or absence of a change in the newly generated area-specific list content; and

upon request from said terminal, relay-distributing said location-dependent content to said terminal.

43. (Revised) The relay distribution method according to claim 42, further comprising:

transmitting a message comprising a

distribution request for said list content to a content processing apparatus;

in response to said message, receiving said area-specific list content generated from said list content;

displaying said area-specific list content;

reporting said location information, acquired at regular intervals, to said content processing apparatus;

in response to said location information, receiving said update information;

when said update information indicates presence of a change in content, transmitting a redistribution request for said area-specific content to said content processing apparatus;

in response to said request, receiving said area-specific content;

displaying the new area-specific list content;

transmitting a message comprising a distribution request for said location-dependent content selected by said user from said area-specific list content, to said content processing apparatus;

in response to said message, receiving said location-dependent content; and

displaying said location-dependent content.

44. (Cancelled)

45. (cancelled)

46. (Revised) A program that causes a computer to:

receive list content from a content communication server upon request from a terminal, said list content providing location conditions in a list organized by location conditions in which location-dependent content, being content assigned correspondence to geographical location information, and a reference destination of said location-dependent content, are compiled for each location condition;

receive location information from said terminal;

upon receiving a distribution request for said list content from said terminal, generate area-specific list content comprising information on said location-dependent content corresponding to said location information by extracting said list organized by location conditions in which are provided said location conditions matching said location information from said list content, and distribute said area-specific list content to said terminal;

upon receiving said location information anew from said terminal, distribute previously generated area-specific content and update information indicating presence or absence of a change in the newly generated area-specific list content; and

upon request from said terminal, relay-distribute said location-dependent content to said terminal.

47. (Revised)

The program according to claim 46, that further causes a computer to:

transmit a message comprising a distribution request for said list content to a content processing apparatus;

in response to said message, receive said area-specific list content generated from said list content;

display said area-specific list content;

report said location information, acquired at regular intervals, to said content processing apparatus;

in response to said location information, receive said update information;

when said update information indicates presence of a change in content, transmit a redistribution request for said area-specific content to said content processing apparatus;

in response to said request, receive said area-specific content;

display the new area-specific list content;

transmit a message comprising a distribution request for said location-dependent content selected by said user from said area-specific list content, to said content processing apparatus;

in response to said message, receive said

location-dependent content; and

display said location-dependent content.

48. (Cancelled)

49. (cancelled)

50. A computer-readable recording medium that stores the program according to claim 46.

51. A computer-readable recording medium that stores the program according to claim 47.

52. (Cancelled)

53. (cancelled)

Statement under PCT Article 19(1)

The prior art patent and the present invention relate to the same technical field, and, more particularly, broadly relate to navigation systems and geographical information systems.

Typical examples of navigation system functions include route guidance to the destination and searching for information on surrounding areas.

The present invention broadly relates to navigation systems and geographical information systems.

In particular, the present invention is made with the purpose of providing a navigation system having functions for searching for information on surrounding areas and providing the information to mobile terminals at a high level of efficiency. Features of the present invention include (1) distribution of structural geographical information; (2) searching for information on surrounding areas at a high level of efficiency; and (3) mobile terminal user interface.

By contrast with the present invention, the prior patent (EP 0 945 706 A、US 6 415 227 B1) relates only to a method of query in relational database storing geographical information, a data storing method, and memory management.

The present amendment cancels pages 138-152.